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A Taxonomy for Homework Used by Mental Health Case Managers When Working with Individuals Diagnosed with Severe Mental Illness

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Abstract

A survey was completed by 122 case managers describing the types of homework assignments commonly used with individuals diagnosed with severe mental illness (SMI). Homework types were categorized using a 12-item homework description taxonomy and in relation to the 22 domains of the Camberwell Assessment of Need (CAN). Case managers predominately reported using behaviourally based homework tasks such as scheduling activities and the development of personal hygiene skills. Homework focused on CAN areas of need in relation to Company, Psychological Distress, Psychotic Symptoms and Daytime Activities. The applications of the taxonomy for both researchers and case managers are discussed.

Homework has been recommended as a component of case managers' work with individuals diagnosed with schizophrenia (Glaser, Kazantzis, Deane, & Oades, 2000). Whilst there is evidence that case managers regularly use homework (Kelly, Deane, Kazantzis, Crowe, & Oades, 2006), there is no systematic data regarding the specific types of assignments used. Research on the relationship between homework and psychotherapy outcome has predominately focused on anxiety and depression (see Kazantzis, Deane, & Ronan, 2000). The types of homework used for these disorders have been relatively well specified (e.g., Beck, Rush, Shaw, & Emery, 1979), with preliminary evidence suggesting that the 'type' of homework assignment is a moderating factor on client outcome (Kazantzis et al., 2000). There has been limited research examining the types of homework assignments used in the treatment of severe mental illness¹ (SMI; Deane, Glaser, Oades, & Kazantzis, 2005). Based on a descriptive review, Glaser et al. (2000) listed a range of assignments that have been used in the treatment of schizophrenia, including activity scheduling, taping of sessions, self-monitoring and interpersonal assignments. However, no empirical investigation has examined the types of homework assignments implemented by case managers working with individuals diagnosed with schizophrenia.

A limitation with previous homework research has been that researchers have either not specified or poorly described the types of homework activities being used (Shelton & Levy, 1981). In order to develop an evidence base for the effectiveness of specific types of homework assignments for particular problems, it is first important to be able to reliably categorize the types of homework assignments. For example, increased physical activity is promoted within the literature to improve the health of individuals diagnosed with SMI (Daumit et al., 2005). Whilst clients report an interest in being more physically active, participation rates are commonly reported below the general population (Ussher, Stanbury, Cheeseman, & Faulkner, 2007). By categorizing the types of homework assignments we are able to examine if there are certain types of physical activity homework tasks that clients are more likely to complete. Further to this, we can potentially identify those tasks that lead to the greatest physical health benefits. It also provides the opportunity to examine whether case managers use strategies suggested in the literature to improve adherence to physical activities (e.g. involvement of social support; Daumit et al., 2005).

Several review articles have suggested various homework categories related to a range of mental health problems (Dunn & Morrison, 2007; Glaser et al., 2000; Haley, 1976; Hay & Kinnier, 1998; Helbig & Fehm, 2004; Johnson & Kazantzis, 2004; Luboshitzky & Gaber, 2000; Mahrer, Gagnon, Fairweather, Boulet, & Herring, 1994; McLeod & Nelson, 2005; Reid, 1975; Shelton & Levy, 1981; Wells, 1982). Two empirically derived categorisation systems have also been developed. A taxonomy using eight categories of homework assignments was developed by reviewing between-session tasks utilised by psychologists working within a university outpatient setting and conducting a content analysis of homework examples (Scheel, Seaman, Roach, Mullin, & Mahoney, 1999). Similarly, Mahrer, Nordin and Miller (1995) conducted a content analysis of 100 psychotherapy journal articles that resulted in a taxonomy with six categories. Limitations of both taxonomies are that the client population did not adequately incorporate clients diagnosed with SMI and specifically focused on homework assignments being used within psychotherapy rather than in case management.

A range of allied health professionals are involved in delivering mental health case management. Nurses, psychologists, social workers, occupational therapists and welfare workers all commonly work within community mental health teams and bring discipline specific skills to the case

management approach. For example, nurses play a major role in supporting medication adherence (Coombs, Deane, Lambert, & Griffiths, 2003), psychologists are utilised to conduct specific counselling interventions (Bedell, Hunter, & Corrigan, 1997) and occupational therapists may assist with ensuring that the individuals living situations are adequate (Luboshitzky & Gaber, 2000). There is also a great deal of skill and task overlap, where case managers will be required to provide a variety of generic case management activities. These may include assisting the individual to master public transport; access leisure and sport activities; or take advantage of education or employment opportunities (Bjorkman & Hansson, 2000). With the extended range of activities provided by mental health case managers it seems highly likely that case managers would use an extended range of between-session activities to assist in client care.

Mahrer et al. (1995) also advocate for research that explores the relationship between homework type and client problems. Based on published reports, Mahrer et al. observed that there are varied constellations of problems and homework assignments in the treatment of schizophrenia. Schizophrenia affects individuals functioning across a wide range of social, physical and psychological domains. Given this severe impact on functioning, treatment for schizophrenia should target client need (Macpherson, Varah, Summerfield, Foy, & Slade, 2003; McCrone & Strathdee, 1994), with individual treatment goals addressing the most relevant needs.

The Camberwell Assessment of Need (CAN) is a widely used measure to assess level of need for people diagnosed with a mental disability (Arvidsson, 2003; Wennstrom, Sorbom, & Wiesel, 2004). The CAN assesses need across 22 domains (Slade, 1999). In the present study the 22 domains of the CAN were used as a structure to describe homework assignments being used with individuals diagnosed with severe mental illness. Such a structure will also allow investigation of the relationship between client need and the types of homework assignments used by case managers. Thus, the broad aim of the study is to describe different types of homework assignments used in the treatment of individuals diagnosed with SMI and to develop a descriptive taxonomy for homework. A reliable taxonomy is needed to be able to assess the extent that the type or content of homework is important in achieving specific outcomes for particular problems. In addition, the relationship between homework and need is explored.

Methods

Participants

One hundred and ninety-five Australian mental health case managers were asked to participate in a questionnaire survey. A total of 155 of the research questionnaires (76%) were returned, with 122 (63%) being useable. Questionnaires were not included if less than 80% of the items were completed ($n = 30$), or if the participant was not currently working within a case management position with an active case load ($n = 3$).

Respondents were case managers from public mental health services and non-government services in the states of Queensland (QLD), New South Wales (NSW) and Victoria (VIC) in Australia. The three non-government organisations provided a combination of residential care, supported housing and day programs utilising case management models of client care. These organisations were all participating in a larger study, aimed at evaluating the implementation of a recovery-orientated approach to case management (Oades et al., 2005).

Seventy-percent of the sample were female, with the majority of case managers being registered nurses (43%) or allied health workers (35%). The remaining clinicians (21%) were employed as welfare or support workers, having completed 3–4 years of polytechnic level training in the field of welfare at a Technical and Further Education (TAFE) institution. On average, clinicians had worked in their respective profession for 14 years, had 14 clients on their caseload and spent approximately 1 h per session with each client. The majority of people they worked with had been diagnosed with SMI with the single largest patient group on their caseload having a diagnosis of schizophrenia (48%).

Procedures and Measure

Questionnaires were distributed through team leaders to the case managers or case managers were approached prior to completing training conducted as part of the Australian Integrated Mental Health Initiative (AIMhi) – High Support Stream project (Oades et al., 2005). Each participant was provided with an information sheet describing the purposes of the study and informed that participation was confidential and voluntary. Other data from this survey regarding the frequency of use and attitudes toward homework have been reported elsewhere (Kelly et al., 2006; Kelly, Deane, Kazantzis, & Crowe, in press).

Within the survey homework was defined as “any between-session activity that is tied to a therapeutic goal” (Deane et al., 2005). Case management was defined as a “means of coordinating services for mentally ill people in the community where each individual is assigned at least one mental health worker who is expected to: (a) assess the individual’s needs, (b) develop a care plan, (c) arrange and monitor suitable care to be provided, and (d) maintain contact with the individual” (Marshall, Gray, Lockwood, & Green, 2004, p. 4).

The questionnaire included 19 items that specified a range of homework assignments that would be potentially utilised by case managers (see Table 1 for items). The items were originally included in a large survey of USA psychologists regarding their use of homework activities (Kazantzis, Lampropoulos, & Deane, 2005). The frequency that each of the 19 homework activities was used with clients was rated on a Likert scale from 1 (never) to 5 (almost all clients).

Table 1 Mean Ratings of How Often Different Homework Activities Are Recommended

Homework activities	<i>M</i>	<i>SD</i>
Increasing pleasure (eg. Social outings, going to the movies)	4.10	.78
Scheduling activity or exercise	3.87	.89
Increasing mastery (eg. Successful practice of skills such as shopping and budgeting)	3.81	.95
Relaxation practice	3.54	.96
Think about therapy goals or session events without written component	3.35	1.03
Controlled breathing or distraction	3.29	1.10
Practicing cognitive techniques, examining available evidence, alternatives	3.21	1.20
Monitor own behaviour, such as record of food intake, compulsions or daily activities	3.13	.99
New or alternative behaviours, such as increasing pleasure or mastery	3.00	1.21
Read material relevant to treatment, psycho-education or self help material	2.91	1.03
Monitor emotions, such as the use of subjective ratings of intensity	2.86	1.23
Monitor interpersonal interactions, such as social, couple or familial interaction	2.84	1.19
Manipulating behaviour via cues or consequences	2.82	1.16
Monitor physiological changes, such as bodily changes during panic attacks	2.72	1.11
In-vivo exposure (eg. Confronting fears in real life situations)	2.61	1.15
Monitor cognitions such as the use of dream diaries or daily thought records	2.60	1.11
Complete paper and pencil measures of treatment outcomes or process	2.43	1.23
Test validity of thoughts or assumptions, such as behavioural experiments	2.43	1.21
Hyperventilation or other induced physiological states	1.84	1.10

Note: Scale 1 = never, 2 = rarely, 3 = sometimes, 4 = often and 5 = almost all clients.

Case managers were also asked the open-ended question, "Please think about the last client that you have treated who was diagnosed with schizophrenia. Could you please describe the homework assignment(s) you asked your client complete?" The written descriptions were then used as data for developing the homework type and need taxonomies.

Generation of the Mental Health Case Management Homework Type Taxonomy and CAN Homework Taxonomy

To generate the homework taxonomies a literature review was conducted of studies reporting types of homework tasks. These studies were identified using two methods: (1) a computer search of the PsychINFO database, 1980 through 2005, using the key terms 'behavioural practice', 'extratherapy', 'homework', 'self help assignments', 'between session activities' and 'types'; (2) a manual search of the reference sections of previous reviews.

Twelve homework types from the final sample of studies and reviews were used to form a preliminary category system for the Mental Health Case Management Homework Type Taxonomy (see Table 2.). A second category system, CAN Homework Taxonomy, for needs addressed by the homework was formed by the 22 need categories from the Camberwell Assessment of Need and an additional 'other' category (CAN; Slade, 1999). This meant that each homework item could be rated

by homework type and need addressed. A content analysis was conducted of the homework assignments by three researchers and both the Mental Health Case Management Homework Type Taxonomy and CAN Homework Taxonomy were further refined. The pool of homework examples was then independently rated by an experienced mental health clinician and researcher (RK). (See Table 2 for the Mental Health Case Management Homework Type Taxonomy description and Table 3 for items of the CAN Homework Taxonomy)

Table 2 Mental Health Case Management Homework Type Taxonomy

Homework Category	Number	Percent	Examples from literature review	Examples reported by case managers
Monitoring	38	23	Observational or monitoring tasks, ^{f,d} self monitoring. ^{k,m}	Diary of activities, monitoring hallucinations, monitor medication side effects, chart when verbally aggressive to others
Tasks of daily living	28	19	Actual tasks and activities eg. Personal hygiene, home management, money management ^l	Completing household chores, taking medication, showering at least 3 times a week
Planning, problem solving & scheduling	15	10	Decision making, ^h activity scheduling. ^{l,m}	Planning weekly activities, make an appointment with GP, weekly activity scheduling
Experiments & coping skills	14	10	Unique tasks calling for a one-time performance by the client, ^h Behaviours the therapist does not want the client to carry out, ^h Learn a new skill or extinguish an old one, ^c interpersonal assignments ^{h,l} and social skills, ^h coping strategies, ^h graduated exposure & practicing. ^{k,m}	Listening to music when symptoms are severe, practice social skills with family
Social activity & exercise	13	9	Social interactions, ^h increasing social contact & activity, ^h decreasing social activity, ^h increasing physical activity, ^h	Walking 10 min a day, commence art group, attend AA meetings
Relaxation	10	7	Stress management, ^{h,l} relaxation practice. ^{k,m,n} mindfulness meditation, ^m	Practice abdominal breathing, meditation, relaxation exercises
Information seeking	9	6	Information gathering. ⁿ	Use telephone to find a GP, finding out local transport options
Cognitive techniques	8	5	Cognitive distraction, ⁿ belief modification, ⁿ evidence evaluation & logical reasoning, ⁿ reality testing, ⁿ reframing & restructuring of meaning, ^h Promotion of self esteem, ^h cognitive ^l	Challenging thoughts and feelings, when hearing voices ask "where is the real evidence for what the voice is saying"
Reading, listening, writing & watching	7	5	Reading, listening & watching, ^g taping of sessions, ^{h,k} bibliotherapy ^l	Read information on schizophrenia or medication side effects
Outcomes measures	4	3		Complete outcome measures
Goal setting	4	3	goal setting. ^m	
Therapeutic writing	1	1	Writing. ^g	Writing a letter to daughter

Note: ^aReid (1975), ^bHaley (1970), ^cShelton and Levy (1980), ^dWells (1982), ^eMaher et al. (1994), ^fMaher, Nordin, and Miller (1995), ^gHay and Kinnier (1995), ^hScheel, Seaman, and Roach et al. (1999), ⁱGlaser et al. (2000), ^jLuboshitzky and Gaber (2003), ^kKazantzis, Deane, and Ronan (2000), ^lHeibig and Fehm (2004), ^mJohnson and Kazantzis (2004) and ⁿMcLeod and Nelson (2002)

Table 3 CAN Homework Taxonomy – Homework Assignments Used for the Treatment of Schizophrenia Grouped by Items on the Camberwell Assessment of Need (CAN)

CAN Dimensions	Number	Percent	Example
<i>Basic</i>			
Daytime activities	23	17	Planning weekly activities, to attend an art class
Accommodation	3	2	Register for public housing
Food	3	2	Develop a healthy eating plan
<i>Health</i>			
Psychotic symptoms and psychological distress	37	27	Monitor hallucinations, relaxation practice to reduce stress
Physical health	15	11	To complete exercise program, check up with GP
Alcohol	3	2	Keep record of days alcohol free, attend AA meetings
Safety to self	1	1	Call helpline when in crisis
Drugs	1	1	Complete drug use measure
Safety to others	1	1	Record times verbally aggressive to others
<i>Social</i>			
Company	10	7	Observe family interactions, making conversation with friends
<i>Functioning</i>			
Money	6	4	Keep a record of expenses, contact disability support officer at Centrelink
Self-care	6	4	Have breakfast at 9.30 am, attend to personal hygiene each day
Looking after the home	4	3	Complete household chores
Basic education	1	1	Follow up TAFE course enrolment
<i>Services</i>			
Info on condition and treatment	4	3	Read material on medication side-effects, written information provided on schizophrenia
Benefits	4	3	Follow up study allowance
Transport	3	2	Finding out local transport options
Telephone	1	1	Use telephone directory to find GP
<i>Other</i>	10	7	Complete outcome measures, think about goals for the future

Note: Case managers did not report assigning homework related to Intimate Relationships, Sexual Expression or Childcare domains.

Results

Reliability of Coding for the Homework Types and Need Taxonomies

The two raters applied both the 12 Mental Health Case Management Homework Type Taxonomy codes and the 23 CAN Homework Taxonomy codes to the 130 homework items provided by case managers. There was 89% agreement between the raters concerning Homework Type and 92% agreement between the raters concerning Need.

Cohen's kappa (Cohen, 1960), and the cut-offs and labels recommended by Fleiss (1981) were used to evaluate the inter-rater reliability of both the Homework Type and Need ratings. A conservative criterion for interrater agreement was for raters to assign the same codes to a given homework item (see Todd, Deane, & Bragdon, 2003). To evaluate this criterion, multiple general codes by each rater were placed in descending numeric order and concatenated into single codes (e.g., codes 2, 8 became 82). Interrater agreement on the summary codes was good for both the Homework Types ($k = .85$) and Needs ($k = .86$).

As a further check on reliability, agreement on the type of homework description was examined. Multiple codes assigned by rater 2 were re-ordered to maximize agreement with coder 1 (Todd et al., 2003). A comparison of the first codes of each rater showed excellent agreement for both Homework Type ($k = .91$) and Needs ($k = .87$).

Descriptions of Homework Assignments Used

Homework was used by 93% of case managers within the survey (Kelly et al., 2006). On a list of 19 predetermined homework categories (see Table 1 for items), respondents most frequently reported using tasks to increase pleasure ($M = 4.10$, $SD = .78$), the scheduling of activity or exercise ($M = 3.87$, $SD = .89$) and increasing mastery ($M = 3.81$, $SD = .95$). Case managers reported rarely using written outcome or process assignments ($M = 2.43$, $SD = 1.23$), testing the validity of thoughts ($M = 2.43$, $SD = 1.21$), or hyperventilation ($M = 1.84$, $SD = 1.10$).

The Mental Health Case Management Homework Type Taxonomy

Most cases ($n = 114$, 88%) received one code, with 14 of the cases (12%) receiving 2 codes. The number and percentage of each homework type is presented in Table 2. Of the monitoring tasks, 17 homework assignments were cognitive, 13 were behavioural, 3 were interpersonal, and 1 was physiological. Case managers predominately used a range of behavioural homework assignments. For example, 45% involved clients planning, scheduling or engaging in activities such as information seeking, physical activity or completing tasks of daily living. Where case managers reported using cognitive tasks, the majority of these assignments involved the monitoring of hallucinations or delusions. Only 5% of all homework activities involved the use of specific cognitive techniques to modify or challenge thoughts or beliefs. Case managers did not explicitly use rewards or punishment within their homework assignments.

CAN Homework Taxonomy

Only six cases (4%) received two codes. Table 3 provides a summary of the homework activities rated by need. Case managers used homework that focused on 19 of the 22 CAN need domains.

There were no homework items for the Intimate Relationships, Sexual Expression or Childcare domains. Due to difficulties separating the categories, Psychological Distress and Psychotic Symptoms were combined within the analysis. Forty-three percent of homework assignments focused on health related needs, 21% concentrated on basic needs, 9% addressed service needs, 7% social needs, and 12% focused on functioning needs. Seven-percent of the homework assignments could not be classified according to need, with the majority of these homework assignments focusing on general goal setting.

Discussion

Case managers' report using a range of behavioural tasks that are very practical in nature with the focus on assignments related to the development of daily living skills. This included scheduling and participating in social and physical activities, the development of personal hygiene and house maintenance skills, and practicing coping skills to manage symptoms. Twenty-three percent of homework involved monitoring activities, predominately focusing on charting behavioural tasks or recording hallucinations and delusions. Homework assignments used by case managers correspond closely with recommendations made by Glaser et al. (2000) regarding the use of homework with individuals diagnosed with schizophrenia. The development and practice of daily living skills is also consistent with a review of homework activities used by occupational therapists working in mental health contexts. In this review it was noted that completing actual tasks of daily living provided individuals with "cognitive, affective, and behavioural learning experiences and an opportunity to develop sensory, perceptual, motor, social, and academic knowledge and skills" (Luboshitzky & Gaber, 2000, p. 51).

It has been argued that homework should be linked to the individual's treatment goals and the establishment of goals should largely be driven by perceived needs both within the context of case management and psychotherapy (e.g., Conoley, Padula, Payton, & Daniels, 1994; Hay & Kinnier, 1998; Kazantzis, Dattilio, & Macewan, 2005; Luboshitzky & Gaber, 2000). People diagnosed with recurring and persistent mental disability consistently provide high ratings of unmet needs in the areas of Company, Psychological Distress, Psychotic Symptoms and Daytime Activities (e.g., Freeman, Malone, & Hunt, 2004; Macpherson et al., 2003). It was encouraging to find that the homework assignments described by case managers closely match these areas of need. This suggests that at a general level at least, the overall frequency of homework occurring in specific categories is broadly consistent with need domains. However, future research should match need ratings, goal content and homework assignments at an individual level to more systematically test for coherence between the three activities.

Clients have previously rated mental health services as not being able to address complex personal needs such as Intimacy and Sexual Expression (Freeman et al., 2004). Within the current study, homework assignments were not assigned in either of these areas. It is possible that some Intimacy or Sexual Expression needs may be indirectly targeted by homework that focuses on social relationships or daytime activities, but further research is required to assess how these needs might be better addressed by specific homework tasks.

Due to the limited sample size and the focus on case managers' work with individuals diagnosed with psychotic disorders, it is likely that there will be other types of homework assignments that are used. For example, case managers in the current study did not identify the use of homework

activities that involved the use of computers. However, there is an increasing body of evidence suggesting that computer applications may be integrated within treatment (see Bloom, 1992 for review) and that computer assisted approaches can be successfully used with individuals diagnosed with schizophrenia (Bellucci, Glaberman, & Haslam, 2003; Burda, Starkey, Dominguez, & Vera, 1994). Whilst personal digital assistants (PDA's; i.e. handheld computers) have been successfully trialled as a research method for individuals diagnosed with schizophrenia (Kimhy et al., 2006), they also hold considerable promise for use as a homework tool. Additionally, case managers used an extremely limited range of cognitively based homework assignments in the present study. There may be other treatment contexts where there is greater emphasis on cognitively focused treatments for psychosis (Dunn, Morrison, & Bentall, 2002, 2006; McGurk & Mueser, 2006; Turkington, Dudley, Warman, & Beck, 2004). Similarly, other treatment programs may explicitly emphasise use of contingency management systems using explicit reward systems. Thus, the current taxonomy of homework assignments may require expansion and refinement in the future.

The development of a reliable taxonomy is an important step in establishing an evidence base for a particular phenomenon (e.g., Maier, Cornblatt, & Merikangas, 2003). For example, the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1994), is a taxonomy that has refined scientific research by clearly describing psychological disorders. Although it is continually in development and review, the DSM has also proven to be an extremely valuable resource for clinicians to guide their assessment and treatment decisions. Whilst not at the same level, it is hoped that the current taxonomies will provide a useful tool to assist both researchers and case managers when working with individuals diagnosed with SMI.

From a research perspective, the taxonomies can be used to describe the actual types of homework assignments used by case managers in a particular study. For example, the current researchers are in the process of categorizing over 1,000 homework assignments administered by mental health case managers in a large multi-site study (Oades et al., 2005). This information will be used to describe the interventions provided by case managers in actual clinical settings. The taxonomies could also be used to address specific research questions. For example, there is some evidence to suggest that certain types of homework may be more useful for particular clinical problems (Abramowitz, Franklin, Zoellner, & Dibernardo, 2002). An important area of research is the development of an evidence base to support the use of specific homework tasks for particular clinical symptoms or need domains. The current taxonomies may provide a useful categorization system in the development and refinement of this evidence base.

From a case manager's perspective, it is hoped that the taxonomies provide useful information on the range of homework tasks available for use with individuals diagnosed with SMI. The CAN Homework Taxonomy provides a useful approach to examine how particular homework tasks may address their clients' areas of unmet need. This is particularly important given recommendations that treatment should target unmet need (Macpherson et al., 2003; McCrone & Strathdee, 1994).

To facilitate the evaluation of evidence for the effectiveness of specific homework activities and to clarify what specific elements of multi-component interventions might be most effective in the treatment of SMI, it is important that researchers have a taxonomy to be able to categorise the types of homework that are used. The present study provides a framework that allows diverse

homework assignments to be reliably categorised. Future work should focus on the use and reliability of this taxonomy in the everyday work of case managers.

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Footnotes

1 1There is variation in the terms used to describe psychiatric disabilities. For example, in a review of the literature 17 definitions were identified to describe severe and persistent mental illness (Schinnar, Rothbard, Kanter, & Yoon Soo, 1990). For the purposes of the current study we will refer to severe mental illness (SMI; i.e., schizophrenia, bi-polar and schizoaffective disorder). The grouping of these disorders are consistent with previous conceptualizations of disorder duration and severity (Bedell, Hunter, & Corrigan, 1997).

2 2It was agreed by coders that where multiple ratings were provided for a single homework assignment, the order of these ratings was quite arbitrary. Therefore, the order of homework assignments for multiple ratings was not considered.